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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,719	01/05/2006	Hideaki Yamamoto	B588-596 (25815.609)	1517
26272 7590 07/02/2010 COWAN LIEBOWITZ & LATMAN P.C. JOHN J TORRENTE 1133 AVE OF THE AMERICAS NEW YORK, NY 10036				
EXAMINER ARCERO, ADAM A				
ART UNIT		PAPER NUMBER		
1795				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/563,719

Applicant(s)

YAMAMOTO, HIDEAKI

Examiner

ADAM A. ARCIERO

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

**FUEL CELL DEVICE CAPABLE OF OUTPUTTING A SIGNAL REPRESENTING A
RESIDUAL CAPACITY, METHOD FOR OUTPUTTING A SIGNAL REPRESENTING
A RESIDUAL CAPACITY OF A FUEL CELL DEVICE, AND ELECTRONIC DEVICE
CAPABLE OF DETECTING A RESIDUAL CAPACITY OF A FUEL CELL DEVICE**

Examiner Adam Arciero

S.N. 10/563,719

Art Unit 1795

June 29, 2010

DETAILED ACTION

1. The Applicant's response filed on April 07, 2010 was received. Claim 11 has been amended. Claims 1-10 and 15-18 remain withdrawn.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 11-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In amended claim 11, on lines 8-10, Applicant recites: "the pressure detecting unit detects a first pressure equilibrium state of the first hydrogen desorbing characteristic and a second pressure equilibrium state of the second hydrogen desorbing characteristic." Applicant points to Fig. 6 and pages 16-17 of the originally filed specification for support. However, Fig. 6

is a graph showing that the first and second pressure equilibrium states can be adjusted by changing the mixing ratio of the first and second hydrogen storage alloy. This does not teach a pressure detecting unit which detects first and second equilibrium states of the first and second hydrogen desorbing characteristics, respectively. Furthermore, paragraph [0085]-[0086] of the present specification discloses that a pressure sensor detects the pressure within the hydrogen cylinder and a temperature sensor detects a temperature within said cylinder. A microcomputer then reads a pressure value of the pressure equilibrium state corresponding to the detected temperature of each hydrogen storage alloy with a reference to a table stored in a memory of the microcomputer. There is no support for a pressure detecting unit which detects the pressure equilibrium states that is caused on the basis of the first and second hydrogen desorbing characteristics. Therefore, claim 11 contains new matter.

Claim Rejections - 35 USC § 103

5. The claim rejections under 35 U.S.C. 103(a) as being unpatentable over Ito et al. and Kanazawa on claims 11-13 are withdrawn, because Applicant has amended independent claim 11.
6. The claim rejections under 35 U.S.C. 103(a) as being unpatentable over Ito et al., Kanazawa and Dickman et al. on claim 14 is withdrawn, because Applicant has amended independent claim 11.

7. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (JP 2003-139298) in view of Kanazawa (JP 59-197546) and Fujitani et al. (US 5,728,483).

As to Claim 11, Ito et al. disclose an electronic device capable of detecting a residual capacity of a fuel cell device (Abstract). Said fuel cell device comprises a first tank section comprising a first hydrogen storage material and a second tank comprising a second hydrogen storage material, said tanks comprising respective pressure sensors (pressure detecting units) and flow rate control parts (Abstract). Said first and second hydrogen storage materials have different characteristics from each other (Abstract). Ito et al. further disclose a residual amount detecting unit for detecting a residual hydrogen amount by using the pressure measurements and by controlling the flow rates of the hydrogen from both the first hydrogen storage unit and the second hydrogen storage unit (Abstract). Ito et al. disclose a control unit which controls the operations of the fuel cell and the calculations for determining the residual amount of hydrogen (Abstract). Ito et al. does not specifically disclose wherein the fuel cell system comprises a tank for accommodating at least two kinds of hydrogen storage alloys, and wherein the control unit operated with the electric power supplied from the fuel cell.

However, Kanazawa teaches of a fuel tank comprising a mixture of two different kinds of hydrogen storage alloys (Abstract). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the system of Ito et al. with one tank comprising a mixture of two different kinds of hydrogen storage materials, because Kanazawa teaches that such a setup makes it possible to simply perform the indication of a hydrogen residual amount by simple pressure measurements (Abstract). Furthermore, the courts have held that using one piece rather than multiple pieces to perform the same function is within the skill of one ordinary

skilled in the art *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

Ito et al. and Kanazawa do not specifically disclose wherein the pressure detecting unit is able to detect the first pressure equilibrium state or the second pressure equilibrium state that is caused on the basis of the first and second hydrogen desorbing characteristics.

However, Fujitani et al. teaches of a system for storing and utilizing hydrogen comprising a hydrogen absorbing alloy for storing hydrogen (Abstract). Fujitani et al. further teaches that the equilibrium hydrogen pressure and the amount of hydrogen absorption are especially important characteristics of the hydrogen absorbing alloys (col. 6, lines 48-61). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the system operation of Ito et al. and Kanazawa by measuring the equilibrium hydrogen pressures of the hydrogen storage alloys, because Fujitani et al. teaches that the equilibrium hydrogen pressure is an important characteristic for determining the hydrogen absorption, storage (residual amount) and desorption pressures relating to safety and reliability (col. 6, lines 48-65).

As to Claim 12, Ito et al. does not specifically disclose wherein the fuel cell system comprises a tank for accommodating at least two kinds of hydrogen storage alloys, and wherein the control unit operated with the electric power supplied from the fuel cell.

However, Kanazawa teaches of a fuel tank comprising a mixture of two different kinds of hydrogen storage alloys (Abstract). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the system of Ito et al. with one tank comprising a mixture of two different kinds of hydrogen storage materials, because Kanazawa teaches that such a setup makes it possible to simply perform the indication of a hydrogen residual amount by simple pressure measurements (Abstract). Furthermore, the courts have held that using one

piece rather than multiple pieces to perform the same function is within the skill of one ordinary skilled in the art *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

As to Claim 13, Ito et al. disclose two separate tanks for accommodating two different types of hydrogen storage alloys. Ito et al. does not disclose one discrete tank with two separate spaces to accommodate the two different hydrogen storage alloys separately. However, the courts have held that using one piece rather than multiple pieces to perform the same function is within the skill of one ordinary skilled in the art *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (JP 2003-139298) in view of Kanazawa (JP 59-197546) and Fujitani et al. (US 5,728,483) as applied to claims 11-13 above, and further in view of Dickman et al. (US 2001/0049038 A1).

As to Claim 14, the combination of Ito et al., Kanazawa and Fujitani et al. does not specifically disclose a display.

However, Dickman et al. teach a control system for a fuel cell system, said control system comprises a user interface having a display (pg. 7, [0064]). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the system of Ito et al. and Kanazawa with a user interface and display, because Dickman et al. teach that such a display may show current values measured by sensors of the system, enabling a user to monitor and/or interact with the operations (pg. 7, [0064]).

Response to Arguments

9. Applicant's arguments with respect to claims 11-14 have been considered but are moot in view of the new ground(s) of rejection as necessitated by Applicant's amendments to the claims.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM A. ARCIERO whose telephone number is (571)270-5116. The examiner can normally be reached on Monday to Friday 8am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795